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# **QUARTERLY GROUNDWATER MONITORING REPORT (JULY 2004)**

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**HAWLEY AUTO BODY AND PAINT  
2902 LYTTON STREET  
SAN DIEGO, CA 92110**

**UNAUTHORIZED RELEASE  
FILE No. H12948-002**

**PREPARED BY:  
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August 20, 2004  
Project No. 200329H-1

Dr. Nasser Sionit  
Site Assessment and Mitigation Program  
County of San Diego  
Department of Environmental Health Services  
1255 Imperial Avenue, 3<sup>rd</sup> Floor  
P.O. Box 129261  
San Diego, CA 92112-9261

**Re: Quarterly Groundwater Monitoring Report  
Hawley Auto Body and Paint  
Unauthorized Release File No. H12948-002  
2902 Lytton Street  
San Diego, CA 92110**

Dear Dr. Sionit:

On behalf of our client, Hawley Auto Body and Paint, D-MAX Engineering, Inc. (D-MAX) is pleased to submit the attached Quarterly Groundwater Monitoring Report. Presented in this report are the results from July 2004 groundwater monitoring conducted on July 14 and 15, 2004, in accordance with the County of San Diego's letter to proceed with continued groundwater sampling dated July 21, 2003 and the workplan dated November 20, 2002.

Should you have any questions regarding this report, please do not hesitate to contact me at (858) 455-9988 Ext.22.

Sincerely,  
D-MAX Engineering, Inc.

Arsalan Dadkhah, Ph.D., P.E.  
Project Manager

cc: Mr. Don Hawley, Hawley Auto Body and Paint

# TABLE OF CONTENTS

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<b>SECTION</b>	<b>PAGE</b>
<b>SITE DESCRIPTION</b>	<b>1</b>
<b>MONITORING WELL PURGING AND SAMPLING</b>	<b>2</b>
<b>GROUNDWATER SAMPLE ANALYSIS</b>	<b>3</b>
<b>ANALYTICAL RESULTS</b>	<b>3</b>
<b>DISCUSSION</b>	<b>4</b>
<b>RECOMMENDATIONS</b>	<b>5</b>

## **TABLES**

1 - Monitoring Wells and Groundwater Elevations July 2004	<b>6</b>
2 - Quarterly Groundwater Sample Analytical Results	<b>7</b>
3 - Summary of Groundwater Sample Analytical Results, Years 2000, 2001, 2002, and 2003, and 2004.	<b>8</b>

## **FIGURES**

- 1 - Monitoring Well Locations
- 2 - Groundwater Gradient Map

## **ATTACHMENTS**

- A - Groundwater Sampling Data Sheets
- B - Laboratory Analytical Reports

## **SITE DESCRIPTION**

Hawley Auto Body and Paint is located at 2902 Lytton Street, San Diego, California, approximately 200 feet southeast of Rosecrans Street (Figure 1). The project site is bordered on the south side by Lytton Street and on the west side by an AM/PM mini-mart and Loma Carwash. To the east of the project site is a motorcycle shop, and to the north of the site are apartments and single-family residential properties. A review of the 1975 United States Geological Survey (USGS) 7.5 Minute Quadrangle, Point Loma, California topographic map indicates that the site lies at an elevation of approximately 40 feet above mean sea level (MSL).

Currently, there are nine groundwater monitoring wells at the subject property. The first four monitoring wells (MW-1 through MW-4) were installed as part of a Site Assessment in February 2000. On February 25, 2000, all four monitoring wells were purged and sampled in accordance with the County of San Diego (County) Department of Environmental Health (DEH), Site Assessment and Mitigation Program (SAM) guidelines. In January 2001, four additional monitoring wells (MW-5 through MW-8) were installed to further assess lateral and vertical extent of the impacted soil and groundwater. Groundwater samples were collected from all eight monitoring wells on February 5, 2001. An additional well (MW-9) was added on March 7, 2001 to further delineate the extent of contamination. Groundwater sampling of MW-9 was conducted on March 12, 2001. After completing the installation of the nine monitoring wells, quarterly sampling was conducted on May 14, 2001, August 20, 2001, November 12, 2001, and February 18 and 19, 2002.

Another workplan was submitted on November 20, 2002 to conduct additional quarterly sampling for a period of one year. Quarterly sampling at all nine monitoring wells commenced on December 30 & 31, 2003, March 25 & 26, 2003, June 6 & 9, 2003, and August 11 & 12, 2004.

Upon completing the above-mentioned quarterly sampling, the County concurred on July 21, 2003 that additional quarterly sampling was required. Quarterly sampling commenced on January 8 & 9, 2004 and April 4 & 5, 2004. This report presents the results of the July 2004 groundwater sampling and monitoring conducted on July 14 and 15, 2004.

## **MONITORING WELL PURGING AND SAMPLING**

On July 14 and 15, 2004, D-Max Engineering, Inc. (D-Max) conducted the July 2004 round of groundwater sampling at Hawley Auto Body and Paint. Monitoring wells MW-1 through MW-9 were purged using a groundwater pump, and groundwater samples were collected and submitted to an analytical laboratory.

The purging commenced with measuring the depth to groundwater at each well. The depth to groundwater ranged from 21.25 feet below ground surface (bgs) at monitoring well MW-9 to 28.73 feet bgs at monitoring well MW-1. Table 1 presents the elevations of the monitoring wells and groundwater elevations. The results of the groundwater elevation were used to develop a groundwater contour map shown in Figure 2. The groundwater flow direction was calculated to the east with an approximate average gradient of 0.002 feet/ feet.

The borehole volume for each well was calculated by using the protocol outlined in Section 5 of the 2002 Site Assessment and Mitigation (SAM) Manual. Once the recharge characteristics of the wells were determined, we were able to start the well purging process. An electric water pump was used to discharge groundwater from each of the monitoring wells. The discharged groundwater was placed into 55-gallon drums staged at the subject property until it could be disposed of at a later time.

Groundwater purging from each monitoring well took place in several steps. Initially, one borehole volume of water was removed using the water pump. Once the borehole volume was removed, a groundwater sample was collected and measured for pH, temperature, and electrical conductance. Simultaneously we measured the depth to groundwater. During the second step, one-half borehole volume of water was removed and the same groundwater quality parameters were measured. Another one-half borehole volume of groundwater was purged if the difference in pH or conductivity was greater than 10 percent of the first measurement. This process was repeated until the measured change in pH or conductivity were less than 10 percent of the previous measurements. The field datasheets are included in Appendix A.

Groundwater samples were collected using disposable bailers from each monitoring well once the groundwater parameters were stabilized within 10 percent of the previous measurement and the monitoring well had recovered 80 percent of the initial depth to

groundwater. Once the bailer was filled with water, it was lifted out of the monitoring well and poured into four 40-milliliter (ml) glass vials and one 125 ml amber bottle. The bottles were labeled, stored in a sealed cooler, and submitted to EnviroMatrix Analytical Laboratory within the recommended holding times.

## **GROUNDWATER SAMPLE ANALYSIS**

Nine sets of groundwater samples (one set for each monitoring well) were collected. No free product was observed at any of the monitoring wells. Most of the groundwater collected was clear in clarity; however, groundwater from MW-2 was opaque (black tint). A hydrocarbon odor was detected at monitoring wells MW-2, MW-3, MW-5, MW-6, and MW-7.

Samples were analyzed for total petroleum hydrocarbons (TPH) at full carbon range in general accordance with Modified EPA Method 8015, as well as for benzene, toluene, ethylbenzene, and total xylene (BTEX), T-butyl alcohol (TBA), Di-isopropyl ether (DIPE), ethyl T-butyl ether (ETBE), T-amyl methyl ether (TAME) and methyl T-butyl ether (MTBE) in general accordance with EPA Method 8260B. The results of the analyses are presented in Table 2. The laboratory reports are included in Appendix B. A summary of all existing and previous groundwater analyses conducted for monitoring wells MW-1 through MW-9 is presented in Table 3.

## **ANALYTICAL RESULTS**

During the July 2004 quarterly sampling and monitoring, TPH-gasoline, TPH-diesel, benzene, ethyl-benzene, toluene, total xylene, and MTBE were detected at the subject property. TBA, DIPE, ETBE, and TAME were not detected at any of the nine monitoring wells. TPH-diesel was noted for the first time in the analytical results presented by the laboratory. Detection of TPH-diesel is a result of overlap from the gasoline product range. The following bullets present a range of contaminant concentrations detected. Table 2 also presents the analytical results.

- TPH-gasoline was non-detect at MW-1, -4 and -9 and ranged from 309 µg/l at MW-8 to 22,700 µg/l at MW-2.

- TPH-diesel was non-detect at MW-1, -4, and -9 and ranged from 2,870 µg/l at MW-3 to 6,890 µg/l at MW-2.
- Benzene was non-detect at MW-1, -3, -4, -7, -8, and -9 but ranged from 172 µg/l at MW-5 to 1,240 µg/l at MW-2.
- Ethyl-Benzene was non-detect at MW-1, -4, -8, and -9 but ranged from 6.58 µg/l at MW-7 to 868 µg/l at MW-2.
- Toluene was non-detect at MW-1, -3, -4, -7, -8, and -9, but ranged from 480 µg/l at MW-5 to 4,050 µg/l at MW-2.
- Total xylene was non-detect at MW-1, -4, -8, and -9 but ranged from 4.82 µg/l at MW-7 to 3,250 µg/l at MW-2.
- MTBE was detected only at MW-1 at 70.6 mg/l and MW-5 at 54.8 µg/l.

## DISCUSSION

A goal of the quarterly groundwater sampling and monitoring program at Hawley Auto Body is to collect sufficient groundwater data to establish a trend analysis. In reviewing the groundwater analytical results for this quarter compared to the past quarter, a general decrease in contaminant concentration was observed at several monitoring wells.

A decrease in TPHg concentration was observed at all monitoring wells except MW-5 and -8. MW-5 and -8 exhibited a significant increase in TPHg concentration compared to the previous sampling event. TPH-diesel was noted as being detected at six monitoring wells. TPH-diesel detections are a result of overlap from the gasoline range product. During previous quarterly monitoring, the overlap from the gasoline range products was removed and the nine monitoring wells were considered non-detect.

All monitoring wells with detects of benzene and toluene were observed with concentrations less than the previous quarterly monitoring report results. Ethylbenzene decreased at MW-2, -6, -7, and -8 but increased at MW-3 and -5. Total xylene decreased at MW-2, -6, and -7 but increased at MW-3 and -5. MTBE decreased in concentration at MW-1 and -5.

Contamination is observed to be most concentrated at monitoring wells MW-2, -5 and -6 which are located at the middle of project site. Contaminant concentrations increase and decrease during different times of the year. There is insufficient data to establish a trend analysis. Additional sampling on a quarterly basis is necessary to establish a trend analysis. Table 3 provides a summary of groundwater sample analytical results for years 2000 through 2004.

## **RECOMMENDATIONS**

There is a fluctuation in constituent concentrations. There was an increase in more than one constituent concentration at MW-3 and MW-5, while other monitoring wells showed a general decrease compared to the previous quarterly monitoring event. It is premature to establish a trend analysis at this time with such a variation between different quarterly monitoring data. Additional groundwater sampling is recommended until a trend analysis maybe established. The next quarterly sampling event is proposed for Fall 2004.



**TABLE 1**  
**MONITORING WELLS AND GROUNDWATER ELEVATIONS**  
**JULY 2004**

<b>Well Location</b>	<b>Top of Casing Elevation<sup>1</sup> (feet)</b>	<b>Depth to Groundwater (feet)</b>	<b>Groundwater Elevation (feet)</b>
MW-1	100.00	28.73	71.27
MW-2	97.50	26.30	71.20
MW-3	97.15	25.83	71.32
MW-4	94.08	22.85	71.23
MW-5	97.46	26.27	71.19
MW-6	97.02	25.82	71.20
MW-7	98.65	27.38	71.27
MW-8	97.25	26.02	71.23
MW-9	92.22	21.25	70.97

**Notes:**

<sup>1</sup> Based on an arbitrary datum of 100 feet at the top of monitoring well MW-1.

**TABLE 2**  
**QUARTERLY GROUNDWATER SAMPLE ANALYTICAL RESULTS, JULY 2004**

(All concentrations in µg/l)

Sample Location	TPHg <sup>(1) (9)</sup>	TPHd <sup>(1)(9) (10)</sup>	Benzene <sup>(2) (9)</sup>	Ethyl-Benzene <sup>(2) (9)</sup>	Toluene <sup>(2) (9)</sup>	Total Xylene <sup>(2) (9)</sup>	MTBE <sup>(3)(9)</sup>	TBA <sup>(4)(9)</sup>	DIPE <sup>(5)(9)</sup>	ETBE <sup>(6)(9)</sup>	TAME <sup>(7)(9)</sup>
MW-1	nd	nd	nd	nd	nd	nd	<b>70.6</b>	nd	nd	nd	nd
MW-2	<b>22,700</b>	<b>6,890</b>	<b>1,240</b>	<b>868</b>	<b>4,050</b>	<b>3,250</b>	nd	nd	nd	nd	nd
MW-3	<b>1,690</b>	<b>2,870</b>	nd	<b>87.8</b>	nd	<b>159.3</b>	nd	nd	nd	nd	nd
MW-4	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
MW-5	<b>5,400</b>	<b>2,930</b>	<b>172</b>	<b>190</b>	<b>480</b>	<b>911</b>	<b>54.8</b>	nd	nd	nd	nd
MW-6	<b>9,230</b>	<b>2,990</b>	<b>218</b>	<b>179</b>	<b>800</b>	<b>608</b>	nd	nd	nd	nd	nd
MW-7	<b>1,040</b>	<b>2,950</b>	nd	<b>6.58</b>	nd	<b>4.82</b>	nd	nd	nd	nd	nd
MW-8	<b>309</b>	<b>3,090</b>	nd	nd	nd	nd	nd	nd	nd	nd	nd
MW-9	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

**Notes:**

- <sup>1</sup> TPH = Total petroleum hydrocarbons in general accordance with Modified EPA Method 8015B.
- <sup>2</sup> Benzene, ethylbenzene, toluene and total xylene analyzed in general accordance with EPA Method 8260B.
- <sup>3</sup> MTBE = Methyl T-butyl Ether analyzed in general accordance with EPA Method 8260B.
- <sup>4</sup> TBA = Tert-Butyl Alcohol analyzed in general accordance with EPA Method 8260B.
- <sup>5</sup> DIPE = DI-Isopropyl Ether analyzed in general accordance with EPA Method 8260B.
- <sup>6</sup> ETBE = Ethyl Tert-Butyl Ether analyzed in general accordance with EPA Method 8260B.
- <sup>7</sup> TAME = Tert-amyl methyl Ether analyzed in general accordance with EPA Method 8260B.
- <sup>8</sup> nd = Not detected above the analytical method reporting limit.
- <sup>9</sup> All concentrations in micrograms per liter.
- <sup>10</sup> Results in the diesel organics range are primarily due to overlap from a gasoline range product.

**TABLE 3**  
**SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
**YEARS 2000, 2001, 2002, 2003, AND 2004**

(All concentrations in µg/l)

Sample Location	Sampling Date	TPHg <sup>(1)(5)</sup>	Benzene <sup>(2)(5)</sup>	Ethylbenzene <sup>(2)(5)</sup>	Toluene <sup>(2)(5)</sup>	Total Xylene <sup>(2)(5)</sup>	MTBE <sup>(3)(5)</sup>
MW-1	02/25/00	nd <sup>4</sup>	0.9	nd	nd	2.5	79.6
	02/05/01	430	nd	nd	nd	nd	364
	05/14/01	609	nd	nd	nd	nd	347
	08/20/01	31	nd	nd	nd	nd	409
	11/12/01	nd	nd	nd	nd	nd	458
	02/18/02	135	nd	nd	nd	nd	395
	12/30/02	22.0	nd	nd	nd	nd	99.1
	03/25/03	nd	nd	nd	nd	nd	88.6
	06/06/03	nd	nd	nd	nd	nd	80.2
	08/11/03	34	nd	nd	nd	nd	161
	01/8/04	24	nd	nd	1.24	nd	85.6
	04/02/04	34	nd	nd	nd	nd	98.8
	07/14/04	nd	nd	nd	nd	nd	70.6
MW-2	02/25/00	83,200	5,930	1,940	13,800	8,890	833
	02/05/01	62,000	4,870	1,750	10,200	9,360	nd
	05/14/01	14,600	2,130	nd	3,600	4,410	nd
	08/21/01	53,100	2,450	942	4,760	4,620	nd
	11/13/01	94,500	3,110	1,250	7,500	5,160	nd
	02/19/02	73,000	3,490	1,310	8,150	6,550	nd
	12/31/02	12,000	1,280	640	3,370	2,446	nd
	03/26/03	46,000	2,060	969	5,270	4,240	nd
	06/09/03	59,100	2,280	1,350	6,290	5,280	nd
	08/12/03	65,800	2,690	1,640	7,990	6,710	118
	01/9/04	62,900	1,480	926	4,450	3,620	nd
	04/05/04	25,000	1,420	1,010	4,480	3,670	nd
	07/15/04	22,700	1,240	868	4,050	3,250	nd
MW-3	02/25/00	8,240	19	38	342	1,270	94
	02/05/01	7,000	nd	330	nd	742	nd
	05/14/01	106	nd	nd	nd	nd	nd
	08/21/01	12,500	nd	222	nd	561	nd
	11/12/01	2,430	nd	39.3	nd	37.9	nd
	02/19/02	9,200	nd	165	nd	340.5	nd
	12/31/02	4,900	nd	159	nd	346.8	nd
	03/26/03	2,130	nd	53.5	nd	64.2	nd
	06/09/03	1,060	nd	28.2	nd	31.4	nd
	08/12/03	15,300	nd	401	nd	856	nd
	01/9/04	9,470	nd	177	nd	382.5	nd
	04/05/04	2,170	nd	38.3	nd	49.15	nd
	07/15/04	1,690	nd	87.8	nd	159.3	nd
MW-4	02/25/00	nd	nd	nd	nd	nd	nd
	02/05/01	nd	nd	nd	nd	nd	nd
	05/14/01	nd	nd	nd	nd	nd	nd
	08/20/01	nd	nd	nd	nd	nd	nd
	11/12/01	nd	nd	nd	nd	nd	nd
	02/18/02	nd	nd	nd	nd	nd	nd
	12/30/02	nd	nd	nd	nd	nd	nd
	03/25/03	nd	nd	nd	nd	nd	nd
	06/06/03	nd	nd	nd	nd	nd	nd
	08/11/03	26	nd	nd	nd	nd	nd
	01/8/04	nd	nd	nd	nd	nd	nd
	004/02/04	nd	nd	nd	nd	nd	nd
	07/14/04	nd	nd	nd	nd	nd	nd
MW-5	02/05/01	13,100	1,620	421	1,650	2,300	nd
	05/14/01	726	19.9	nd	1.10	260.6	19.6
	08/21/01	9,280	522	168	593	763	16.1
	11/13/01	14,300	708	263	927	990	20.7
	02/19/02	5,400	232	78.4	314	394	nd
	12/31/02	2,400	206	102	292	399	nd
	03/26/03	5,200	120	127	424	547	nd

**TABLE 3**  
**SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
**YEARS 2000, 2001, 2002, 2003, AND 2004**

(All concentrations in µg/l)

Sample Location	Sampling Date	TPHg <sup>(1)(5)</sup>	Benzene <sup>(2)(5)</sup>	Ethylbenzene <sup>(2)(5)</sup>	Toluene <sup>(2)(5)</sup>	Total Xylene <sup>(2)(5)</sup>	MTBE <sup>(3)(5)</sup>
MW-6	06/09/03	10,800	443	270	901	1,248	nd
	08/12/03	19,600	395	221	673	934	43.4
	04/05/04	4,050	204	170	661	807	55
	07/15/04	5,400	172	190	480	911	54.8
	02/05/01	28,900	990	868	4,080	4,050	nd
	05/14/01	6,880	85.0	nd	nd	2,205	70
	08/21/01	41,300	1,420	845	4,290	2,760	124
	11/13/01	23,700	654	521	1,870	1,315	93.0
	02/19/02	24,000	642	464	1,430	1,355	97.2
	12/31/02	17,200	497	346	1,550	1,309	58.5
	03/26/03	8,300	272	246	1,060	871	nd
	06/09/03	29,200	1,010	798	3,730	2,870	nd
	08/12/03	82,100	2,820	1,420	9,260	6,060	158
	01/9/04	28,000	9.22	318	1,640	1,223	nd
MW-7	04/05/04	12,100	260	192	922	636	nd
	07/15/04	9,230	218	179	800	608	nd
	02/05/01	6,180	4.2	nd	nd	168	3.7
	05/14/01	1,090	2.4	nd	nd	20.3	nd
	08/21/01	17,800	3.9	121	2.0	83.8	nd
	11/12/01	11,600	1.3	38.2	nd	14.0	nd
	02/18/02	5,600	nd	18.6	1.0	9.3	nd
	12/31/02	4,100	2.02	30.7	nd	20.24	nd
	03/25/03	5,240	4.56	49.5	nd	32.66	nd
	06/09/03	7,300	2.10	61.9	nd	43.4	nd
	08/12/03	24,400	5.65	202	nd	241.6	nd
	01/8/04	3,770	1.10	29.8	nd	34.57	nd
	04/02/04	2,420	nd	10.2	nd	8.35	nd
	07/14/04	1,040	nd	6.58	nd	4.82	nd
MW-8	02/05/01	1,050	nd	nd	nd	19.7	2.3
	05/14/01	97.0	nd	nd	nd	nd	nd
	08/20/01	2,960	nd	11.7	nd	2.3	nd
	11/12/01	5,830	nd	36.3	nd	4.3	nd
	02/18/02	1,890	nd	7.1	1.1	1.1	nd
	12/30/02	1,300	nd	2.18	nd	nd	nd
	03/25/03	1,360	nd	2.53	nd	nd	nd
	06/09/03	2,640	nd	7.52	nd	nd	nd
	08/11/03	6,520	nd	15.1	nd	nd	nd
	01/8/04	1,360	nd	4.13	1.33	nd	nd
	04/02/04	43	nd	1.29	nd	nd	nd
	07/14/04	309	nd	nd	nd	nd	nd
MW-9	03/12/01	nd	nd	nd	1.1	nd	nd
	05/14/01	nd	nd	nd	nd	3.4	nd
	08/20/01	nd	nd	nd	nd	nd	nd
	11/12/01	nd	nd	nd	nd	nd	nd
	02/18/02	nd	nd	nd	nd	nd	nd
	12/30/02	nd	nd	nd	nd	nd	nd
	03/25/03	nd	nd	nd	nd	nd	nd
	06/06/03	nd	nd	nd	nd	nd	nd
	08/11/03	nd	nd	nd	nd	nd	nd
	01/8/04	nd	nd	nd	1.91	nd	nd
	04/02/04	nd	nd	nd	nd	nd	nd
	07/14/04	nd	nd	nd	nd	nd	nd

**Notes:**

<sup>1</sup> TPH = Total petroleum hydrocarbon (in gasoline range) in general accordance with Modified EPA Method 8015.

<sup>2</sup> Benzene, toluene, ethylbenzene and total xylene analyzed in general accordance with EPA Method 8260B.

**TABLE 3**  
**SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
**YEARS 2000, 2001, 2002, 2003, AND 2004**  
(All concentrations in µg/l)

**Notes (Continued):**

<sup>3</sup> MTBE = Methyl tert- butyl ether analyzed in general accordance with EPA Method 8260B

<sup>4</sup> nd = Not detected above the analytical method reporting limit.

<sup>5</sup> All concentrations in micrograms per liter.

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**ATTACHMENT A**

**GROUNDWATER SAMPLING DATA SHEETS**

JULY 2004

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## ATTACHMENT B

### LABORATORY ANALYTICAL REPORTS

July 2004

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